

Section 3-3: Problem Solving Skills: Model Algebra

By the end of this lesson, you should be able to answer:

- How do you create a mathematical model to describe a situation?

Where you might see this in the real world:

- Almost everywhere

Define the following terms:

1. Model
2. Mathematical Model
3. Algebraic Model
4. Rule

There are many times when real world situations can be modeled mathematically. The difficult part arises when we try to put a real world situation into mathematical terms. To do this, we will use the **Five-Step Plan**.

The Five-Step Plan

- 1.
- 2.
- 3.
- 4.
- 5.

Example 1: A taxi charges \$3.25 plus \$.80 for each quarter-mile.

- a. Make a table that expresses the fare for trips of that range from 1 to 3 miles, including every quarter mile.

Number of Miles	1				2				3
Fare									

- b. Write an algebraic model of the fare system.

- c. Write a rule for the fare system.

Example 2: Compare vacation packages offered at two beach resorts. The Matt Mitarnowski Surf Resort offers a family package of \$750 for five days with a charge of \$75 for each additional day. Fuzzy Jeff's Sun and Sand Resort offers a similar plan for \$350 for three days with a charge of \$100 each additional day. Which resort offers a better deal for a stay of 4 days? What about 9 days? How about 14 days?

Problem Set:

"I look to the future because that's where I'm going to spend the rest of my life." - George Burns